A.) Detailed specifications for the 5.5" x 5.5" Square Flat Mirror

1.) Material: Fused Silica
1.1) No cracks anywhere in the substrate.

2.) Surface Area: 5.500" = 0.010" long x 5.500" ± 0.010" wide.

3.) Thickness: 1.250" ± 0.020".

4.) Minimum Clear Aperture: Central ~~6.75~~ 4.95" long x 4.95" wide, square, (90% of length and width).

5.) Wedge Between Optical Surfaces: 1 to 3 arc minutes.

6.) Protective Chamfer: 45° bevel of 1 mm ± 0.5 mm.

7.) Edge chips: Edge chips to conform to MIL-O-13830.

8.) All Untoleranced Surfaces: 90 degrees ± 5 arc minutes, at # 220 grit or finer surface finish.

9.) Mirror Surface:
9.1). Surface figure ≤ λ/10 peak to valley deviation at 632.8 nm
9.2) Surface Quality: 40-20 scratch-dig per MILSPEC MIL-O-13830
9.3) Coating: Hard multilayer dielectric coating
9.3.1) Reflectivity greater than 99% at normal incidence (+/- 2° angle) at 248 nm. Coating to be uniform within 1% over the clear aperture.
9.3.2) Damage threshold for coated surfaces greater than 0.5 J/cm^2 per pulse of 248 nm radiation. Maximum pulse repetition rate is 5 pulses per second, with pulse durations of 20 ns.
9.3.3) Durability: Must be insoluble in water, alcohol and acetone.
10.) Uncoated Back Surface (Flat Surface):
10.1) Flatness: ≤ λ peak to valley deviation from flat surface at 632.8 nm.
10.2) Surface Quality: 80-60 scratch-dig per MILSPEC MIL-O-13830 with revision "h."

B.) Testing and documentation for the 5.5" Square Flat Mirror.

1.) Record thickness, length, and width of the mirror.

2.) Mark an arrow or carrot to coated side on edge of optic.

3.) Provide damage threshold data for the applied coating at 248 nm that has been measured on a witness sample or provide 2 1" diameter, 1/8" thick test samples to the Naval Research Laboratory.

Delivery Schedule: ??